

STATE OF CONNECTICUT
STATE EMPLOYEES' RETIREMENT COMMISSION
ACTUARIAL SUBCOMMITTEE

DATE: July 15, 2026

LOCATION: VIA ZOOM

Present:

Peter Adomeit, Chairman

Trustee Michael Bailey

Actuarial Trustee, Claude Poulin

Others present:

John Herrington, Retirement Services Division

Jean Reid, Retirement Services Division

Larry Langer, CavMac

Ed Koebel, CavMac

Ryan Gunderson, CavMac

Kim Winter, Rose Kallor

Megan Piwonski, Retirement Services Division

1 (Proceedings began at 3:03 p.m.)

2

3 PETER ADOMEIT: Yeah, that should start the
4 video. Yeah. Please read off the attendance, please.

5 KIMBERLY WINTER: Okay, we have in attendance
6 Peter Adomeit, Chairman; Michael Bailey, Trustee; Claude
7 Poulin, Actuarial Trustee; John Herrington from the
8 Retirement Services Division, Jean Reid from the
9 Retirement Services Division; Larry Langer from CavMac,
10 Ed Koebel from CavMac, Ryan Gunderson from CavMac; Megan
11 Piwonski from the Retirement Division, and myself,
12 Kimberly Winter, filling in for Cindy.

13 PETER ADOMEIT: Okay, thank you. Well, let's
14 see. The one item on the agenda is the Connecticut State
15 Employees Retirement Commission Experience Study. So
16 we'll turn that over to you, Larry.

17 LARRY LANGER: Beautiful. Thank you. Thank
18 you, Peter, the Actuarial Subcommittee.

19 Ryan's going to pull up the presentation in a
20 minute. Ryan and I are tag teaming this. Ed Koebel is
21 on the line, but he's off remote, and he can only protest
22 through text to me, so he will have no input during this
23 meeting.

24 So, we have here the Experience Study Review
25 for the Connecticut State Employees Retirement System. A

1 couple of comments before we get into it. I know this is
2 gonna, you know, this might take the air out of the
3 balloon on this meeting, but you know, we don't have a
4 report quite done yet, so it's probably, you know, you
5 want -- you'll want more time to review. I know Claude
6 is -- really enjoys reviewing these things. I don't mean
7 that to be flip.

8 PETER ADOMEIT: Yep.

9 LARRY LANGER: And so we're going to run
10 through it. You'll get a report in the next week or so,
11 and we can come back next month, next meeting, to
12 finalize it, and then you can pass it on and use it.

13 PETER ADOMEIT: Okay.

14 LARRY LANGER: There's no rush, as it were,
15 because we're going to use the results of this study for
16 the next valuation, you know, which we'll be presenting
17 in the fall.

18 PETER ADOMEIT: All right, so we're putting it
19 off until the next meeting basically?

20 LARRY LANGER: Putting off the approval part.

21 PETER ADOMEIT: Approval. Okay.

22 LARRY LANGER: Yeah.

23 PETER ADOMEIT: Okay, go ahead.

24 LARRY LANGER: All right, so we'll run through
25 it. If you have questions and you forget until next

1 time, that's fine, we'll cover them then. And here we
2 go.

3 So, we have the Experience Study to review on
4 the next slide. We go through the agenda, talk about the
5 team real quick. Remember, it takes a team, not just the
6 two beautiful people you see right now, it's Ryan and
7 myself. Ed is on mute somewhere, and then the rest of
8 the team, Darby Carraway, James Lochner, Robert Faulkner,
9 all work together to pull this information together. And
10 the next slide, we're going to talk through the
11 highlights of the Experience Study.

12 So the Experience Study, you all are used to us
13 talking about the valuation results, you know, where we
14 come out and we say, well, here's the contribution
15 requirements for the upcoming fiscal year, and here's how
16 well funded you are. And we do that annually for each of
17 the plans. The Experience Study is something that only
18 happens every five years. And the purpose of the
19 Experience Study is to determine if the assumptions we
20 use for the valuation worked out well, whether they were
21 quote, unquote, good, as it were, and how we do that.

22 This Experience Study process, we took a look
23 at what we thought was going to happen with the
24 assumptions and compare it to what actually happened over
25 the past five years. And that information, in part, is

1 used to determine if we need to change assumptions for
2 the upcoming valuations the next five years. And again,
3 the first valuation we're going to use this for is the
4 June 30, 2026, valuation that we'll be delivering in the
5 fall. Not to spoil the results, but, you know, this
6 series results, the highlights of our recommendations
7 are, you know, we were going to recommend that the
8 current 6.9% investment return assumption be maintained.
9 It continues to be reasonable. Salaries, we're going to
10 recommend a slight uptick in the salary increases.

11 Now remember, this is just our assumption.
12 We're not telling everyone you're getting a bigger pay
13 increase. For our valuation purposes, we're recommending
14 that we increase the rate somewhat. And then mortality,
15 there's more up to date mortality tables that just came
16 out in the past year. We're going to update to that.

17 The impact, we've calculated the impact that
18 was applied to this past valuation, it's mixed. So,
19 favorable side of it, the unfunded liability, or the
20 amount of pension debt, is a little lower, and the funded
21 ratio is a little higher. Those are two favorable
22 things. On the unfavorable side, the contribution rate
23 is a little higher, and Ryan will get into that when he
24 gets a little bit further on. Next slide.

25 All right, so, you know, when we look at our

1 actuarial model like went a couple days -- a couple of
2 slides, the assumptions we use have a profound impact on
3 the liabilities and the contribution rates behind the
4 plan provisions, which are the biggest indicator of what
5 the costs are going to be. What assumptions you use have
6 a big impact on the accrued liabilities and the
7 contribution rates. We have assumptions because we don't
8 know what type of benefit payments are going to be paid
9 in the future. No one does. So we have to make
10 assumptions to determine the amount of those future
11 benefit payments. And, you know, since, you know, these
12 contributions we're setting, they have the potential to,
13 you know, front load contributions or push them off into
14 the future. We don't want to be necessarily conservative
15 or too optimistic when we're setting these. You want to
16 try and set a package of assumptions that are pretty
17 likely to occur over the short term. And assumptions are
18 just that, they're assumptions. If we -- if experience
19 differs, because it's not going to match our assumptions,
20 the cost will differ in the future. And that's why we do
21 annual valuations.

22 Slide 6. We have the, you know, the purpose of
23 the Experience Study, and it's simple; determine if we
24 want to keep the current assumptions and review each one
25 of them or change them.

1 You know, there might be a couple that we're
2 like, Ah, we could -- we should have changed -- we should
3 change that going forward. Again, we do it every five
4 years. And assumptions don't predicate the true costs of
5 the plans. We won't ever know the true cost of the plan
6 ever until the last person is paid out -- and plan's
7 open, so it's not going to happen. Our philosophy as
8 actuaries, don't overreact, you know, try and anticipate
9 trends. So it's often said actuaries look in the
10 rearview mirror to predict the future. We do look in the
11 rearview mirror a little bit, but we're trying to predict
12 what we think is going to happen in the future. And then
13 we make simplifications, or sometimes we just flat out
14 disregard some information because we don't think it's
15 going to determine what's going to happen.

16 COVID, for instance, there's events during
17 COVID that probably won't happen again, and so we
18 disregard some of that information when we're going
19 through it. We'll point that out.

20 Slide 7. Okay, so how we go about this; we
21 compare actual experience with what we thought was going
22 to happen. Ryan's going to get into this thing called
23 the actual over expected ratio, or A/E ratio. And while
24 past experience tells us what we think assumptions should
25 be, for most assumptions, some of them, you can't look at

1 the past and predict the future.

2 Investment returns is one. People's
3 anticipation of investment return; we just don't look at
4 the last five years and say, well, that will continue,
5 because that's not going to send us in the right spot.
6 This is not all just grinding out numbers. I mean, there
7 is a bit of professional judgment involved to determine
8 what the assumption should be in the future. I mentioned
9 earlier, COVID had an impact, and we took that in
10 consideration when making changes. And often, that
11 impact we tried to disregard, you know, things like
12 additional deaths that occurred during COVID, we didn't
13 anticipate they're going to continue.

14 Slide 8. All right, so in addition to
15 assumptions, we tend to look at the funding policy of the
16 plan. And that is, you know, once you get the total cost
17 of the plan, how do you allocate it to different years?
18 How do you allocate to the contribution rates? And we're
19 not recommending any changes as to what's going on,
20 except for one, and we don't have an illustration, it'll
21 be in the report. But how we smooth asset returns, we're
22 recommending a tweak to that. The current method isn't
23 unreasonable. It's reasonable. But it's a type that
24 actuaries have sort of been migrating away from. This
25 asymptotic method -- asymptotic is a big word, meaning

1 converges but never quite gets there. So we're going to
2 something that's more traditional for purposes of future
3 valuations. That's our recommendation. But the rest of
4 the assumptions are reasonable. I mean, methods are
5 reasonable. Slide 9.

6 CLAUDE POULIN: Larry, I have a question.

7 LARRY LANGER: Yeah.

8 CLAUDE POULIN: The asset valuation -- this is
9 Claude.

10 LARRY LANGER: Yeah, yeah.

11 CLAUDE POULIN: The valuation method was
12 changed from market value and expected actual value to
13 actuarial market value and expected return on market
14 value. I don't see the -- is it the return would be a
15 percentage, right? Like 6% or 7%? It's not the actual -
16 - it's not the value of the assets. Am I missing
17 something?

18 LARRY LANGER: No. Well, the change here is
19 under the current method. We'll get into rates and
20 dollar amounts of return, right?

21 CLAUDE POULIN: Yep.

22 LARRY LANGER: And then in the report it might
23 be a bit clearer, but under the current method, we take
24 the market value and the expected actuarial value from
25 the prior year and then we, it says five year smoothing,

1 but effectively we take a portion of the difference
2 between those two and add it onto the actuarial value.
3 We take 20% of the difference and add it onto the
4 actuarial value. If you keep taking 20% of a rolling
5 difference, you never fully recognize it, like a lot of
6 methods are. So that's the current -- the proposed,
7 which is a bit more common, is we take the difference
8 between, you know, the actuarial return.

9 I'm going to tweak this. It's the difference
10 between market value and the expected return on market
11 value. What do I mean by that? We take the expected
12 return on market compared to the actual return on market,
13 divide that over five years --

14 CLAUDE POULIN: Oh, I see.

15 LARRY LANGER: And you end up with this
16 amortization schedule. My description here, Claude, is
17 poor at best, but I think from your nodding you get what
18 we're thinking about moving towards, right?

19 CLAUDE POULIN: Okay.

20 LARRY LANGER: That'll be clear in the report
21 and we'll tweak the language here. Does that make that
22 make some sense?

23 CLAUDE POULIN: Yep.

24 LARRY LANGER: Okay, cool. Thank you for the
25 question. All right. Selection assumptions.

1 So there is two broad types of assumptions.
2 Economic assumption, think of money assumptions like
3 investment return, inflation. A lot of people include
4 the baseline salary increases and economic assumptions.
5 Demographic assumptions are assumptions with regard to
6 people and specifically like the careers of people. So
7 how likely are people to withdraw or terminate employment
8 or when do they retire? How long do they live there
9 afterwards?

10 Now, what type of salary increases? So in
11 terms of who selects them, I mean, the Board approves the
12 assumptions. And when it comes to economic though, we do
13 rely on other advisors, financial advisors. So Meketa,
14 the investment consultant for the State, they helped us
15 out on providing some of the information you'll see later
16 on. Again, economic defies explanation. You can't look
17 at past data to determine what you think will happen in
18 the future.

19 Demographic though, we do spend a lot of time
20 looking at what's happened within the plan over the past
21 five years. And most of the recommendations are based
22 upon our analysis of the census information.

23 Next slide, 10, economic assumptions. We make
24 use of something called the building block method. It's
25 been around for years and the whole point of the building

1 block method to me is that we want to make sure these
2 assumptions are internally consistent. Right? So
3 investment return and then individual salary increases
4 and general wage increase, they all have this inflation
5 component underneath it, right? Investment return, we
6 tack our real rate of return to get the total investment
7 return. Salary increases, we have something for wage
8 growth and merit or that additional amount of salary
9 increases that occur over the course of a member's
10 career. And then general wage increases again, that has
11 general wage growth.

12 The whole point of this building block approach
13 is that -- early on in my career I remember some folks
14 saying, well, inflation is going to be 5% for the
15 investor return, but just 1% when it's going to be for
16 salary increases. There was a disconnect. They weren't
17 internally consistent. We follow this approach, so we're
18 internally consistent. We're not aggressive like on
19 investment returns and not aggressive enough in salary
20 increases, for lack of better wording.

21 Slide 11. Price inflation. The price
22 inflation assumption we show a historical price inflation
23 here over the course of time. Thirty year averages in
24 the orange, annual inflation, which you can see is quite
25 volatile. And then our current assumption, which is two

1 and a half percent. Again, it's a key. Inflation is the
2 key assumption for purposes of determining COLAs. It
3 underlies our COLA calculations.

4 On slide 12, we talk about the -- some of the
5 things that are used for purposes of determining
6 inflation. We make use of a lot of external -- a lot of
7 external advisors with regard to this, other experts.

8 The one I like the most, and you can determine
9 inflation by looking at these bond yields and the TIPS
10 nominal yield and taking the difference to determine
11 inflation. And you can see those amounts are all in the
12 low 2% range. Social Security puts forth projections of
13 inflation because they have to model out what type of
14 benefits they think they're going to pay. And these are
15 over 75 years and they have an optimistic and a
16 pessimistic and a middle of the road, 1.8% to 3%. And I
17 think the middle of the road is like 2.4%. Horizon
18 survey; Horizon's an actuarial firm that works with a lot
19 of Taft-Hartley funds. They collect information from all
20 sorts of different investment advisors. That consensus
21 is around 2.4%. Another professional advisor is 2.4%.
22 So I've said 2.4% like three or four different times.
23 And that's why we're going to recommend retaining the
24 2.5% assumption. It's just not enough to nudge it down,
25 so we're just going to stay the course and keep the

1 current 2 1/2% assumption.

2 Slide 13. Yeah, the investment return
3 assumption. This is the biggest driver of costs in the
4 valuation returns. When you get into assumptions, right?
5 Little changes in the assumed rates of return has
6 profound impact on the cost and the liabilities. And so
7 any changes you make to this, I always say use caution.
8 Slow, methodical changes are better than big, big
9 changes. The current assumption is 6.9%, and the primary
10 thing, I mean, this assumption, it's not based upon,
11 well, what's my neighbor using? Or, what do we get over
12 the past five years? It's basically, you know, what's
13 your asset allocation and what type of returns do you
14 think you can get on your portfolio based upon those
15 asset allocations?

16 The next slide, we have a little bit of the
17 development hanging out there. Oh, historical returns,
18 which I just told you we don't necessarily make use of.
19 All right. But it's interesting to see over the course
20 of time. You can see, like over the past 10 years we've
21 exceeded the 6.9% assumption. Five years even more.
22 Twenty years, we're a little shy, but remember, 20 years
23 ago, that includes the Great Recession, right? Of 2008.
24 But you know, over the past five, 10 and 15 years, we've
25 actually exceeded the assumption, which is good.

1 Next slide. All right, just as I said you
2 don't look at your neighbor's assumption, thou shalt not
3 covet thy neighbor's investment return assumption.
4 That's part of the actuarial ten commandments, right?
5 Like I said before, we base it upon, you know, your own
6 portfolio and your own risk tolerance. But this trend
7 slide, put together by the National Association of State
8 Retirement Administrators for the past 25 years, the
9 biggest takeaway from here is that, look at the median
10 right there. And this goes back to 2001 up until April
11 of 2026. Each of the bars represents the allocation of
12 returns used by systems for that particular year. If you
13 look at 2001, the median return was 8%, with plans using
14 8 and a half percent up in the red, up at the top, right?
15 And 8% was the median return until 2010, a whole year
16 after the Great Recession came about. But you can see it
17 plummeted quickly so that not quite 10 years later, the
18 median return was 7%. And I don't want to think, I do
19 not believe this is just retirement systems leapfrogging
20 each other. It's because over that course of time,
21 investment professionals lowered their expectation of
22 what they thought returns were going to be. And
23 actuaries have to react to that. We have to lower the
24 investment return assumption. But that's the use of that
25 particular system. And you can see, in this particular

1 chart, you can see you're around, what, the 33rd
2 percentile or the second quartile down in that pale flesh
3 color of six and a half to 7%. You're in that range down
4 there, which is a nice place to be if you like comparing
5 to others, right? And comparison is just natural, even
6 though comparison is the thief of joy.

7 Slide 16. Future expectations. So we have the
8 future expectations based upon your portfolio. We thank
9 Meketa for providing this information. These are real
10 returns that are being modeled at various 5th through
11 95th percentile. The 50th percentile is the return
12 that's just as likely to happen as not happen, you know,
13 your achievement or not, it's right in the middle. You
14 don't want to set your return higher, your real return
15 higher than the 50th percentile. You don't give yourself
16 better than the 50th percent chance of achieving the
17 return. And you can see, looking at the various time
18 spans in years, all of them at the 50th percentile yields
19 4.8%. The variation is at the other percentiles. But
20 4.8%, you know, 4.8% is the median real return that gets
21 added to inflation to get to the assumed rate of return.
22 And then when you get to the next slide, I think we
23 summarize this quite nicely.

24 CLAUDE POULIN: Just a question on this last
25 slide.

1 LARRY LANGER: Yeah.

2 CLAUDE POULIN: This -- the 4.8%, you said it
3 was a median, but it's also -- it's the median, but it's
4 also the average between the 3.63 and 5.99. If you add
5 the 2, divide by 2, then you get 4.8? But this would not
6 be true for year one, wouldn't it, or is it?

7 LARRY LANGER: No, you're asking me to do math.
8 It looks like it's not quite -- and I think the median
9 might not -- I mean, the median might not just be the
10 averages of those. You know, the median is the middle of
11 the representation. Well, you know what the median is
12 versus the average?

13 CLAUDE POULIN: Yep.

14 LARRY LANGER: I think if I average, or if I
15 average 3.24 and 13.52, it's half of 10.28, which is
16 5.14. So it's a little higher than the median in that
17 first year. It's close. And I would expect that because
18 I think we always see that as some sort of -- I'm making
19 my hands like a bell curve. You know, you think of this
20 sort of like a bell curve. It's not completely a bell.
21 Did that answer, Claude?

22 CLAUDE POULIN: Yeah. Yes, it does.

23 LARRY LANGER: Okay, good.

24 CLAUDE POULIN: Yeah.

25 LARRY LANGER: All right. So here we have real

1 returns at different percentiles based upon the Meketa
2 information. And the 50th percentile, the real return,
3 that's, you know, right in the middle. Most likely
4 returns, 50% returns will be higher than the 4.8%. The
5 real returns.

6 When we add it to our inflation assumption, you
7 can see return assumption is 7.3%, which is higher than
8 what we're currently using. The current assumption is
9 6.9%. You know, that -- there's like a 54 chance of
10 meeting or exceeding that 6.9% over the next 10 years.
11 That's where you want to be. You can't pick a return
12 that 100% of the time you're going to be over that. The
13 return would be like 3 or 4%. But 54%, you give yourself
14 a better than 50% chance of achieving the return.

15 So we recommend -- all that being said, we
16 recommend retaining the 6.9% return.

17 On slide 18, general wage growth assumption.
18 So this is sort of an esoteric thing. It's price
19 inflation plus real wage growth or standard living
20 increases, as it were. Quite frankly, we use this as
21 sort of the baseline wage growth for everyone across the
22 board. And then to this we tack on merit longevity to
23 the results. Some folks also call it general payroll
24 growth. It's primary purpose, you'll see later on what
25 Ryan discusses, is it's like -- forms part of the basis

1 for the lowest salary increases we have for an individual
2 over the course of time on average.

3 CLAUDE POULIN: Larry, what happened in 2022,
4 it's the -- instead of having an increase, there was a
5 reduction, wage reduction, of close to 4%. Was that
6 COVID?

7 LARRY LANGER: I suspect so. Right? I mean,
8 if you look at some of the things going on, whenever
9 there is a dip, it's something -- something not great
10 happened. And I think that period is COVID. It's like
11 the boomerang from COVID. It took a year to report it,
12 right? Because COVID was 2020 and 2021. But if you go
13 back, the dip before that is the Great Recession, right?
14 Wages did.

15 CLAUDE POULIN: Yeah.

16 LARRY LANGER: I don't know what happened in
17 '93? I was particularly happy in '93, but apparently not
18 everyone. And then 1980 and '74, I just remember gas
19 lines. Right? So, I think these real rates of increase,
20 they suffer as well during economic hardship periods.

21 CLAUDE POULIN: Now 1972 was after the Nixon
22 wage freeze and it was the highest ever, 7%. And you
23 will be right. So, was it before or after the freeze?

24 LARRY LANGER: Well, if it was -- if the freeze
25 was before, it wasn't a very good freeze, was it?

1 CLAUDE POULIN: Yeah, I believe the freeze was
2 in 1971.

3 LARRY LANGER: Yeah.

4 CLAUDE POULIN: And then that resulted in
5 increases in employee benefits. But because wages were
6 frozen, I think they already called -- this is -- that's
7 55 years ago.

8 LARRY LANGER: All right, we're going to shift
9 gears to demographic assumptions.

10 RYAN GUNDERSON: One more.

11 LARRY LANGER: Oh, I got one more. I'm so
12 eager to hand this off to Ryan because Ryan's been a
13 trooper, like guiding the slides. He's been really good
14 at this.

15 One more economic assumption. He's -- Ryan,
16 show people your hands to show them what you're dealing
17 with. It's very hard on him.

18 Okay, COLA assumptions is part of the economic
19 assumptions. And there's obviously COLAs that are
20 granted the memberships. They vary by different groups
21 that we show on the right there. So we take the COLA
22 assumption and we model out 100. Actually, I think Ryan
23 said 5,000 different scenarios of COLA going out to the
24 future. We vary them using some sort of stochastic
25 process, but then limit it to the provisions of the COLA.

1 And we've gone through and modeled that through our model
2 and determine the amount of COLA rates to be using in the
3 future. And they were reasonably close. And so we are
4 recommending no changes in the COLA rates as well. We
5 came close enough where it doesn't really come to the
6 level where we think a change is necessary. So no impact
7 of changes in the COLA assumption.

8 So, on slide 20. So here's the recommended
9 economic assumption changes, and it's two of them, and
10 they really don't impact things all that much. The real
11 wage growth and the general wage growth, those two things
12 do not impact the results necessarily. They both get fed
13 in when we look at salary increases, which will impact
14 the results. So this is a nice change of pace because
15 economic assumptions is, you know, whenever we've covered
16 that over the past, like, you know, 15 years, this is
17 where the wailing and gnashing of teeth come about
18 because we're always talking about dropping discount
19 rates. The nice thing is y'all did this like 10 years
20 ago, and that was a good time to bite the bullet and run
21 with it and start contributing on a 6.9% basis. So with
22 that, I think I can now safely pass it on to Ryan.

23 RYAN GUNDERSON: Yes, you are done, Larry. So
24 Larry just discussed the economic or money related
25 assumptions. Now the rest of the presentation we're

1 going to get into the demographic or people related
2 assumptions.

3 Demographic assumptions estimate or relate to
4 member behavior and they look at when a member will
5 terminate, when will they retire, will they become
6 disabled before retirement, how long will their benefits
7 be paid and how much will their salary grow when they
8 reach retirement age.

9 So the five demographic assumptions we look at
10 here are just that, termination, retirement, disability,
11 mortality, salary increases, and we'll touch on each of
12 those as we go through the presentation measuring
13 demographic experience.

14 So Larry touched on this a little bit in the
15 beginning, mentioning the A/E ratio or actual to
16 expected. That's where we're comparing actual experience
17 over the study period or the last five years to what we
18 expected to occur under the assumptions that we're
19 currently using in the valuation. We call that the A/E
20 ratio.

21 Any A/E ratio above 100% means actual
22 experience was more than expected experience. An A/E
23 ratio of 100% means they were the same and less than
24 means expected experience was more than actual
25 experience. But along with using A/E ratio to set

1 retirement rates or any demographic rate, we also use
2 professional judgment, as Larry mentioned as well.

3 So evaluating demographic experience here we
4 show an example of what an A/E ratio of 100 would look
5 like. But just setting rates to make the A/E ratio 100%
6 doesn't make a lot of sense when you look at the actual
7 experience. We need to look at the patterns of
8 experience here. So here we have an illustrative
9 probability of deaths and mortality rates. This isn't
10 SERS experience, it's just for illustrative purposes, and
11 you'll see the A/E ratio is 100%, so actual is equal to
12 expected experience. But if you look at the pattern of
13 deaths, there are more deaths at earlier ages, less
14 deaths at older ages. So they average out to an A/E
15 ratio of 100%. But when setting rates, we need to kind
16 of follow the pattern as well. It's a little bit of art
17 and a little bit of science.

18 CLAUDE POULIN: I thought that was interesting
19 about this slide, is that from age 58 to age 67 there is
20 a reduction in the mortality rate from 2.8% to about
21 1.4%. So that's a 50% decrease. And usually, like, the
22 red line is what we expect. But why is it that in the
23 last five years the mortality was -- the mortality rate
24 was much less at age 67 than it was at age 58? I
25 thought, would it be COVID? But COVID should, should not

1 result in the mortality increasing at one particular age.
2 It's -- is there an explanation for that?

3 RYAN GUNDERSON: Claude, this is just an
4 illustrative example, just to show how we need to follow
5 a pattern when setting rates. This isn't the actual
6 mortality experience for CT SERS. We're going to get
7 into that later in the presentation. We just want to
8 show you that we don't want to just match the A/E ratio
9 to 100%. We want to follow the pattern when we're
10 setting rates as well.

11 CLAUDE POULIN: Oh, oh, I understand. Okay,
12 thank you. I thought these were as a result of the
13 investigation.

14 RYAN GUNDERSON: Oh, yeah, no, we will get
15 there.

16 CLAUDE POULIN: Okay.

17 RYAN GUNDERSON: All right. Starting with
18 withdrawal, it's important, this estimates when members
19 are going to terminate the plan. Have they already
20 reached vested status? Will they be eligible for a
21 deferred retirement benefit? Are they non vested? Will
22 they be eligible for a refund of benefits?

23 When studying withdrawal, we looked at non
24 hazardous and hazardous members separately. The rates
25 are based on gender as well as age and years of service.

1 And when looking at our analysis, there's two approaches
2 you can take for an Experience Study. There's headcount
3 weighted, so you have your actual termination headcounts
4 compared to the actual number that we were expecting
5 under our assumptions, or there's a liability weighted.
6 So here, we look at the amount of liability that
7 decremented out, or terminated, and compare that to the
8 expected liability we're expected to terminate.

9 The reason why we use liability basis for most
10 assumptions on the demographic side is because they have
11 a higher impact on the gains and losses to the valuation.

12 So just to refresh your memories, actuarial
13 gains, they're unexpected decreases to the unfunded
14 liability, where actuarial losses are unexpected
15 increases to the unfunded liability. And when we set our
16 assumptions, we're trying to minimize the unexpected as
17 much as possible. But liability weight is preferred,
18 except when we get to disability, but we can touch on
19 that in a minute.

20 Here you'll see withdrawal rates for non
21 hazardous females. This is the actual CT SERS experience
22 over the past five years. Get used to this exhibit
23 because when you do get our report, there are going to be
24 a ton of these exhibits for each decrement for each
25 group. So let me just orient you to what it's showing

1 first.

2 So the light blue bars here are the exposures.
3 And again, this is liability weighted. So we have the
4 liability amounts here. So if we took, for example, age
5 50, or the central age 50, we're looking at 1.4 billion
6 in liability that's exposed to the termination
7 decrements.

8 The dashed teal line here is the actual members
9 that terminated. And the dark blue line is what we were
10 expecting under our current assumptions. So here you
11 see, with the A/E ratio under 100%, we were expecting
12 more terminations than actually occurred. So there was
13 less actual terminations.

14 Like Larry mentioned earlier, when we're
15 setting assumptions, we don't want to overreact. We
16 don't always want to move to the top of the needle. We
17 want to move somewhere in between with our judgment of
18 what future expectations are, what we should expect. So
19 our proposed rates were decreasing from the expected
20 amount, and that's shown in the A/E ratio moving from 90
21 to 96%.

22 CLAUDE POULIN: Ryan, I do have a question. On
23 this chart, also with the next one, the males, what are
24 the numbers on the right side of this graph -- it
25 represents the exposed -- it says exposed, but the

1 numbers are larger for females than they are for males.
2 And they're, they're large numbers, like \$1.6 billion.

3 RYAN GUNDERSON: Yeah, so that represents the
4 total liability amount of members that are exposed to
5 that decrement at that age. So if you summed up all the
6 exposures and all of their liability, it would -- over
7 the five years, and that's why it's, it's a large number,
8 you're looking at 1.4 billion in liability that was
9 exposed over the five-year period.

10 CLAUDE POULIN: Yeah. And this is for females.
11 But then on the next slide is for males, and the exposure
12 seems to be different. But this is hazardous duty. I
13 would expect the male percentage to be preponderant.

14 RYAN GUNDERSON: Because hazardous duty is a
15 smaller population than non hazardous. So it's a smaller
16 group, where the first slide we were looking at non
17 hazardous females.

18 CLAUDE POULIN: Oh, wait. Oh, I see. Oh, non
19 hazardous female. Okay. Thank you.

20 RYAN GUNDERSON: You're welcome. And here,
21 similar graph. Like, you're going to see these a lot.
22 But here, we had expected experience, the dark blue line
23 at the bottom. Actual experience is the dashed teal line
24 up above, and our proposed in between. And you'll see
25 there was more -- there was more withdrawals in the

1 earlier ages compared to what we were expecting, and then
2 less withdrawals in the later ages, so we recommend
3 moving from 92 to 99% of A/E ratio.

4 Disability, we studied this based solely on age
5 and job type, so hazardous versus non hazardous. And
6 here we do use a headcount weighted approach. This is
7 because, using a liability weighted, salaries up until
8 the disability are generally lower because they're
9 missing work before they get approved for a disability,
10 so the liability results are distorted. So we want to
11 use just a headcount basis in order to look at the
12 experience and set the rates. Our last note here is we
13 had COVID in the first two years of the Experience Study.

14 Looking through the experience, we noticed, you
15 know, some oddities, and we, looking back at the past
16 three years, it's more representative of what we expect
17 to happen in the future. So when we're setting our rates
18 for these assumptions, we just looked at the last three
19 years.

20 Here we have disability rates for non hazardous
21 and hazardous. Disability has a small impact on the
22 valuation results. You can see the total number of
23 incidences were 360 disabilities over the past five
24 years. We're expecting 331, so we're recommending
25 modifying the rate slightly.

1 Retirement -- this is one of the documents that
2 has significant impact on the financial cost of the plan.
3 It estimates the timing of when a member is going to
4 retire from active service, which affects how long
5 benefits are going to be paid. We looked at it on a
6 liability weighted basis as it pertains to that, and we
7 looked at it based on age and years of service. And
8 again, because of the COVID years, we looked at the last
9 three years of experience when setting the assumption.

10 We also looked at two portions of retirement
11 rates. We looked at early retirement because a reduced
12 benefit is offered, so they're going to have different
13 behavior than someone retiring under normal retirement.
14 So we set rates based on those two specific sections.

15 Overall, we recommend all rates, changes to all
16 rates, except for Tier III and Tier IV hazardous, and the
17 reason for that is experience was just not credible for
18 that group. We need that experience to emerge before we
19 could recommend any changes, so we recommend maintaining
20 the current rates for that group.

21 Here we have non hazardous Tier II and Tier II-
22 a, early retirement, normal retirement. And starting
23 with early retirement, you'll see there were more early
24 retirements than we were expecting, so we're recommending
25 bumping up those rates, especially from 58 to 61, but not

1 recognizing all experience because we don't anticipate
2 that trend to continue. And then for normal retirement,
3 we increased rates and decreased rates, but overall it
4 was an increase in rates from 88 to 92% for an A/E ratio.

5 And then retirement for hazardous Tier I, Tier
6 II, Tier II-a, here we had more retirements than we were
7 expecting, represented by the 127% A/E ratio. We're
8 expecting decreasing or increasing retirement rates,
9 moving up to 104, especially from ages 69 to 78. You'll
10 see where actual experience far outweighed the expected
11 experience.

12 CLAUDE POULIN: What is the reason -- this is a
13 -- for page 32, for the increase for hazardous duty at
14 age 71 and then at age 73 or 74? It's -- there's
15 something, because they usually, they have full benefits
16 after 20 years of service, but here it seems that usually
17 they would have 20 years of service before these two
18 ages, wouldn't it? Because it would have -- at age 65,
19 they would have the early -- they would have normal
20 retirement anyway. Is there a reason for this, the spike
21 at 70, particularly 71?

22 RYAN GUNDERSON: Yeah, I don't know a reason
23 offhand. You would think they would retire once they
24 have their full benefit eligibility, but from this data,
25 they're working longer than what we're expecting. Larry,

1 you're on mute.

2 JOHN HERRINGTON: My guess is that it's a very
3 small sample size and it just happens to be the one or
4 two people that are that old that happen to retire.

5 LARRY LANGER: Yep, that's it. You know, the
6 thing missing from this chart is the exposure.

7 RYAN GUNDERSON: Exposures, yeah.

8 LARRY LANGER: There's hardly anybody out there
9 at those ages. And you always have a couple of people
10 that really, really like their job, like Ryan, and they
11 stick around forever.

12 RYAN GUNDERSON: All right, mortality. This is
13 one of the biggest driver of costs in the actuarial
14 valuation as well because it affects how long benefits
15 are being paid. If a member lives longer, they're paid
16 more benefits in retirement. This is going to increase
17 costs and liabilities. We do adjust these tables if
18 needed to match actual experience of the plan. We have
19 three levers to do that. We can either set back rates or
20 set forward rates based on age. We can select a table
21 based on benefit size, so below or above median benefits.
22 And then we can scale the rates as well with scaling
23 factors.

24 Our current mortality assumption, the Pub-2010
25 mortality table projected generationally with MP-2020.

1 This is the first public sector retirement -- or
2 mortality table that the Society of Actuaries produced.
3 I think they issued it in 2019 and it's solely of U.S.
4 public sector retirement systems nationally, their
5 mortality experience. And when they developed this
6 table, they looked at experience from 2010 to 2014. So
7 it was the first public sector. Most plans moved to it
8 as soon as they had an Experience Study. So it's been an
9 industry standard. That's what's currently being used.

10 For non-hazardous, we're using the general
11 version of that table, general above median. For
12 hazardous, we're using the public safety version of the
13 tables above median by benefit type, and then our last
14 note at the bottom, MP-2020, the mortality improvement
15 scale. So as people live longer, we're expecting
16 mortality improvements with medical technological
17 advances. MP-2020 we believe it provides sufficient
18 margin for improved mortality experience.

19 So our recommended mortality tables -- well,
20 since the last Experience Study, in fact, since last year
21 the Society of Actuaries published a new public sector
22 mortality tables, the Pub-2016 tables. This was issued
23 in 2025 and the data was based on public sector
24 retirement systems from 2013 through 2019. So it has
25 more years of data to develop their mortality rates. So

1 it has more credibility, and they exclusively left off
2 2020 because of COVID because we just don't know how to
3 handle the COVID years yet. We're going to need more
4 years of mortality experience after COVID before new
5 rates are created. But we're recommending moving to this
6 table, general for the non-hazardous above median as
7 well. Same with hazardous, we want to stay with public
8 safety and above median, and then we're adjusting the
9 rates slightly with some scaling factors and some
10 setbacks and some set forwards. And again, that's just
11 to move more closely to the actual experience that SERS
12 saw over the past five years.

13 We do recommend moving to the MP-2021
14 improvement scale as well. That's the most recently
15 issued version by the Society of Actuaries.

16 And here we have the mortality for non-
17 hazardous males and females. You can see by the A/E
18 ratios there are slightly more deaths than we were
19 expecting. We made some adjustments to the proposed
20 tables to get us more closer to 100%. And you can see
21 the exhibits here.

22 Any questions on these slides?

23 The last decrement we looked at or demographic
24 experience or assumption we looked at is individual
25 salary increase assumption. Larry touched on this a

1 little bit in the beginning. It consists of two pieces.
2 With that building block approach, we have general wage
3 inflation at the bottom, but then also on top of that we
4 add on a merit scale. This merit scale varies by age or
5 service and it reflects longevity and promotional
6 increases. So, as someone works longer in their career,
7 they get promotions, they're going to get higher salary
8 increases and longevity pay. We perform this analysis
9 separately for hazardous and non-hazardous. And again
10 due to COVID and unusual labor markets in the first two
11 years of the Experience Study, we believe we should look
12 at the last two years because it's a better expectation
13 of future experience.

14 And here we have non-hazardous males, their
15 actual rates of salary increase from 2024 to 2025. The
16 blue bars represent actual salary increases at each year
17 of service or level of service. The dark blue bar is the
18 expected salary increases and the orange bar is what
19 we're proposing.

20 So, again, we're not moving all the way to the
21 top of the actual increases, but we do need to make some
22 adjustments to the earlier years of service. And then
23 from 25 years and out we level off to the recommended
24 wage inflation assumption at 3.25%.

25 CLAUDE POULIN: I thought it was interesting

1 that for the first 17 years the actual salary increases
2 were greater than expected except for the first two
3 years. But then they level off. They're very similar.
4 That's -- there's no big difference after the after year
5 19, except for 21. Twenty-one years of service.

6 LARRY LANGER: Yeah,

7 CLAUDE POULIN: There are always exceptions.

8 LARRY LANGER: You run into these weird
9 anomalies. But actuaries are all about, you know, the
10 rate should be sort of smooth, right?

11 CLAUDE POULIN: Yeah.

12 LARRY LANGER: And you know, like look at 21,
13 we just kept it the same. We didn't dive down. But
14 yeah, you get these anomalies. We, you know, and we
15 perform a fair amount of these experience studies and
16 it's fascinating something we have one of them where all
17 the big salary increases were later on in career. They
18 were losing people with lots of service and they had to
19 get big pay increases to keep them on board, right? But
20 yeah, there's, it's fascinating the data here, for an
21 actuary. Yeah.

22 RYAN GUNDERSON: (Inaudible) the salary
23 experience for hazardous members a little more volatile.
24 Less exposures. Here you'll see we increased rates
25 modestly. Total salary increase assumption increased

1 along with the general wage increase assumption.

2 CLAUDE POULIN: Now there are no numbers for
3 the years 7 and 23, 28, 29. Is it because there were no
4 people or because they had those who were there at no
5 increases.

6 RYAN GUNDERSON: Because there was no
7 experience. No people at those --

8 CLAUDE POULIN: There were no people --

9 RYAN GUNDERSON: -- service levels, yeah. We
10 did take a look at a couple other assumptions. These are
11 ancillary, don't have a huge impact on the valuation
12 results. Marriage assumption; we currently assume 80%
13 are married. This is for pre-retirement death benefits.
14 We're recommending no change. Along with that is the age
15 difference assumption between spouses. We are
16 recommending adjusting that slightly to males being two
17 years older than their spouses, and then we looked at
18 pre-retirement death and disabilities if they're service
19 related.

20 So service connected disabilities and deaths.
21 We're assuming 30% of non hazardous duty members and 60%
22 for hazardous duty members and we recommend no changes to
23 that as well.

24 CLAUDE POULIN: Going back to the marriage
25 assumption, what is the current assumption as to the

1 difference in age between males and female? Is it a
2 little bit more than two years? Is it as much as three
3 years or more?

4 RYAN GUNDERSON: It's three years.

5 CLAUDE POULIN: It's three. So it went from
6 three to two.

7 RYAN GUNDERSON: Yes.

8 And here's the summary of all the assumptions
9 we just went over on the demographic side. This will be
10 a good reference for when you get the report. You can
11 look at this as a cheat sheet as you go through each
12 individual decrement.

13 And the slide you've all been waiting for; the
14 cost impact. So how are the ADEC, the actuarially
15 determinant employer contribution, the unfunded
16 liability, the funded ratio, how are they affected based
17 on applying these assumptions to the June 30, 2025
18 valuation.

19 There's a lot of numbers here. We'll just
20 concentrate on unfunded liability funded ratio and the
21 ADEC.

22 Starting all the way to the left we have the
23 actuarial valuation results. So that's under the
24 assumptions that the current assumption package as of
25 that valuation and as we move right we're changing each

1 assumption in the baseline assumption. So if we are
2 looking at salary we still have all the assumptions from
3 the last valuation except we're introducing the new
4 salary increase assumption, and this gives us the results
5 if we just change salary. Then as we move on, we add on
6 additional on top of that last change.

7 So, here I just want to point out salary
8 because of the impact. If you look at the employer
9 normal cost, there's a big increase from 5.43 to 6.25%.
10 Salaries affect future benefit accruals. So you're going
11 to see with a larger salary increase assumption, there's
12 going to be larger salaries, larger benefit accruals.
13 That's going to increase your normal cost rate and your
14 employer normal cost rate.

15 The impact from salary increases on the
16 unfunded liability was \$546 million. And then the
17 increase on the ADEC dollar amount from salaries was
18 \$84.6 million.

19 As we move all the way to the right, let's just
20 look at the final results. This is all our recommended
21 assumption changes, economic and demographic. As of June
22 30, 2025, we're seeing an overall decrease to the
23 unfunded liability. So you saw that large increase in
24 salary while adding in the other changes. The other
25 demographic changes offset that increase to where there's

1 a \$348 million reduction in the unfunded liability.
2 Because of that, the funded ratio ticks up from 59.6 to
3 60.1% or 0.5%, but there is a slight increase in the
4 actuarially determined employer contribution of 0.27%.
5 And again, that's salary driven. The normal cost
6 increases because of the salary increase assumption, the
7 6.33% and then the amortization of the unfunded liability
8 is lower because there's a lower unfunded liability. But
9 that salary increase more than offsets it. So you're
10 going to see a slight increase in the actuarially
11 determined employer contribution at \$12.6 million.

12 CLAUDE POULIN: The (indiscernible) cost
13 increased, especially for the salary increase, but then
14 it went slightly down for the other assumptions, whereas
15 the payment for the unfunded liability decreased all the
16 time, except, of course, for the salary increase in the
17 first year.

18 RYAN GUNDERSON: Right. And you'll see the
19 biggest movers are salary, mortality, and retirement.
20 There's not much change from adding on the termination,
21 disability benefits because they have less of an impact.

22 CLAUDE POULIN: Yep.

23 RYAN GUNDERSON: Larry's favorite slide, the
24 refrigerator slide. He covered this on slide 4 earlier
25 on, but just to reiterate, this is a nice reference to

1 use if you want a high level view of what went on in the
2 Experience Study, what its purpose was, how it affects
3 the results, and we'll just touch on the impact again.

4 Unfunded liability decreased, funded ratio was
5 higher, but the employer contribution amount increased
6 because of that employer normal cost increasing more than
7 the unfunded liability payment.

8 And then the best slide for all of you is the
9 thank you slide. Thank you very much for having us.
10 Thank you for all the work that you do, and please ask
11 any questions.

12 CLAUDE POULIN: I think you've done great work.

13 PETER ADOMEIT: There's no recommendation --

14 CLAUDE POULIN: In many instances, the expected
15 and the actual, you know, of course there's a difference,
16 but the difference is very small. So that reduces the --
17 either the actual gains or losses so that we don't have
18 big differences every year, unless the investment return,
19 of course, that's always the problem.

20 PETER ADOMEIT: I'm assuming now we have no
21 formal report this time, and so we had a meeting, but we
22 don't have a recommendation.

23 LARRY LANGER: Right. We'll be back next
24 month. Folks will have a report with a couple weeks to
25 spare because we know people like reading that in depth.

1 Probably won't be any changes in this, but
2 we'll be available for follow up questions.

3 PETER ADOMEIT: Okay.

4 LARRY LANGER: And if you -- I don't know if
5 you want us all here tomorrow for the meeting or...

6 PETER ADOMEIT: Well, if we're not going to
7 present any actuarial report, there's no reason to have
8 you folks come.

9 LARRY LANGER: Okay.

10 PETER ADOMEIT: Because the report can't be
11 voted on.

12 LARRY LANGER: Yes.

13 PETER ADOMEIT: Yeah.

14 LARRY LANGER: All right.

15 PETER ADOMEIT: So you are free to go.

16 CLAUDE POULIN: So everything will be next
17 month.

18 LARRY LANGER: Next month we'll meet, and then
19 we'll be ready for the Thursday meeting.

20 PETER ADOMEIT: That's right.

21 LARRY LANGER: And the Thursday meeting, if
22 we're asked to present, we've got like four slides that
23 we're going to cover: the refrigerator slide, the cost
24 impact.

25 PETER ADOMEIT: Yeah.

1 LARRY LANGER: And not getting the nitty gritty
2 details, because you all have reviewed them in earnest.
3 Obviously, we can review questions, but that's a whole
4 month away.

5 PETER ADOMEIT: Thank you. So, we met, but
6 didn't meet. Do we have anything else, or is it time to
7 adjourn?

8 CLAUDE POULIN: I move to adjourn, Mr.
9 Chairman.

10 PETER ADOMEIT: Is there a second?

11 LARRY LANGER: I can't second, can I? This is
12 Larry.

13 PETER ADOMEIT: No.

14 CLAUDE POULIN: We are meeting and
15 perpetuating.

16 PETER ADOMEIT: Hey, Herrington, we need a
17 second.

18 JOHN HERRINGTON: Oh, I'll second. I don't
19 think I have the authority. I think Michael left, but I
20 think that we're all set. I think we can --

21 PETER ADOMEIT: We're all set.

22 JOHN HERRINGTON: Yeah.

23 PETER ADOMEIT: Okay. All right. Well, have a
24 nice evening.

25 LARRY LANGER: Thank you.

1 CLAUDE POULIN: Same to you tomorrow.

2 PETER ADOMEIT: Right. Bye now.

3 RYAN GUNDERSON: Bye. Bye.

4

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6 (Meeting adjourned at 4:03 p.m.)

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REPORTER'S CERTIFICATE

I, Wendy Malitsky, do hereby certify that the foregoing is, to the best of my skill and ability, a true and accurate transcript of the State Employees' Retirement Commission, Actuarial Subcommittee



Wendy Malitsky, Notary Public

My Commission Expires March 31, 2030

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